



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
07/702,615	05/17/91	BAINES	R F-8913(859-1)

MMS1/1210
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EXAMINER

TAMAI, K

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 12/10/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
07/702,615

Applicant(s)
Baines

Examiner
Tamai, Karl I.E.

Group Art Unit
2834



☒ Responsive to communication(s) filed on Sep 8, 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 43-80 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 48, 50, 72, and 74 is/are allowed.

☒ Claim(s) 43-47, 49, 51-71, 73, and 75-80 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Jun 10, 1991 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the brush bodies having different sizes, the support arm with different dimensions from a corresponding part of the other support arm, and the brushes having different shapes must be shown or the feature canceled from the claim. No new matter should be entered.

Specification

2. The new title "Brush Assembly for a DC Electric Motor" has been entered into the file. A new title is required that is clearly indicative of the invention to which the claims are directed, such as "Brush Assembly with Axially Spaced Brush Arms Which Have Different Resonance Frequencies".

Claim Rejections - 35 USC § 112

3. The rejection of Claims 52, 58, and 78 are rejected under 35 U.S.C. 112, second paragraph, is withdrawn. The rejection of claims 52 and 58 under 37 CFR 1.75(c) is withdrawn.
4. The objection of Claims 53, 56, 65, and 76 under 37 CFR 1.75(c), is withdrawn.

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 43-46, 52-60, and 76-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Pfatischer. Kobayashi teaches two electrically conductive support arms, axially spaced from each other with each arm substantially the same length and carrying a brush body(see figure 2). Kobayashi does not teach each arm having a different natural frequency of oscillation. Pfatischer teaches a brush assembly for a motor having a first and second brush with two different brush materials to electrically contact the rotor. Pfatischer figure 1 shows the carbon and copper brushes with the same shape, while figure 2 shows them with different shapes. Pfatischer teaches a third and fourth brushes supported diametrically from the first and second brushes. The examiner takes Official Notice that Copper and Carbon brushes of the same shape have different densities and weights. It would have been obvious to a person skilled in the arts at the time of the invention to construct the motor of Kobayashi with the different brushes because Pfatischer teaches that the different brush material would help maintain contact between the brushes and the commutator segments.

7. Claims 47, 49, 71, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Pfatischer, in further view of Muller et al.(Muller). Kobayashi and Pfatischer teach every aspect of the invention except the brush arms having different lengths/resiliencies.

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Pfatischer teaches that it is desirable to maintain contact between one of two axially aligned brushes during operation of the motor. Muller et al. teaches that it is known to maintain electrical contact between two brushes by using different length conductor arms so avoid simultaneously breaking contact with both arms. It would have been obvious to a person skilled in the arts at the time of the invention to construct the motor of Kobayashi with the different brush materials of Pfatischer and having different length support of Muller because Pfatischer suggests maintaining contact and Muller teaches that contact can be maintained by different lengths of slip ring arms.

8. Claims 51 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Pfatischer, in further view of Mabuchi. Kobayashi and Pfatischer teach every aspect of the invention, as discussed above, except the brush being secured by interference fit. Mabuchi teaches a brush secured to a support arm by interference fit. It would have been obvious to a person skilled in the arts at the time of the invention to construct the motor of Kobayashi with the brush materials of Pfatischer, and having the interference fit brush of Mabuchi because the interference fit provides an effective means of securing the brush to the arm.

9. Claims 61-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Pfatischer, in further view of Baine. Kobayashi and Pfatischer teach every aspect of the invention, except the supports mounted on an endcap. Baine teaches the supports mounted on an endcap. It would have been obvious to a person skilled in the arts at the time of the invention to construct the motor of Kobayashi with the brushes of Pfatischer and having the arms of

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Kobayashi supported inside an endcap as in Baine because an integral endcap having the brush arms and bearings facilitates assembly and provides a convenient way to ground the brush terminals.

Response to Arguments

10. Applicant's arguments filed 9/8/98 have been fully considered but they are not persuasive.

Applicant's argument regarding the mounting of the support arms and specifically the disclosure of how the arms are spring mounted is not persuasive. The claims contain no limitation to how the arms are mounted or whether the arms include a spring. The argument is moot.

The applicant's argument regarding "Official Notice" is not persuasive. The applicant argues that 37 CFR 1.107(b) requires the Official Notice to be spelled out in an affidavit. The examiner disagrees. 37 CFR 1.107 was reversed on Oct. 10, 1997 and became effectively reversed Dec. 1, 1997, which is 4 months prior to the Official Notice being taken in paper 41 and 10 months prior to the Applicant's response. Also, the cited regulation, 37 CFR 107(b), applied to rejections based on facts within the personal knowledge of the examiner, not rejections based on Official Notice by the examiner. The MPEP(seventh edition) 2144.03 paragraph 2, describes the PTO policy on Official Notice. As per MPEP 2144.03, the examiner has provided a photocopy from the CRC Handbook of Chemistry and Physics showing that carbon and copper have different densities to support the position taken in the Official Action. The MPEP does not require an additional Office Action, as suggested by the Applicant.

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The Applicant's argument that there is no motivation to use C/Cu brushes is not persuasive. Pfatischer teaches that two different brushes are used to help maintain electrical contact with the commutator and that the carbon brush polishes the commutator while the copper brush provides high conductivity. The fact that applicant has recognized another advantage, that being different resonant frequencies in the different brushes, which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). The rejection is proper and maintained.

The applicant's argument that the combination of Kobayashi and Pfatischer do not teach an arm/brush combination with different resonant frequencies. The examiner disagrees. Both Kobayashi and Pfatischer teaches the same type arm supporting both brushes. Pfatischer teaches the use of different brushes, such that the combination would have the same type arm holding different brushes with different densities and weights, the different densities would create different resonant frequencies in the both the brush and the brush/arm combination. The rejection is proper and maintained.

The Applicant's argument that Muller does not teach a brush on the end of the arm is not persuasive. Kobayashi shows electrical arms with contact members (brushes) between the electrically conductive arms and the commutator. The contact members clearly allowing better contact between the rotating commutator and the stationary arms. The rejection is proper and maintained.

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The Applicant's argument that Muller does not teach arms with different resiliencies and different dimensions are not persuasive. Muller specifically teaches(col. 2 lines 36-40) that the different length of the contact arms provides different resonant frequencies to avoid both arm simultaneously breaking contact. The longer arm being easier to bend and bending a greater distance than the shorter arm, and as such having a greater resiliency than the shorter arm. The rejection is proper and maintained.

Allowable Subject Matter

11. Claims 48, 50, 72, and 74 are allowed.

Conclusion

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066. The examiner can be normally contacted on Monday through Friday from 8:00 am to 5:00 pm. The facsimile number for the Group is (703)305-3431. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist at (703) 308-1782.

KIT

December 4, 1998


NESTOR RAMIREZ
PRIMARY EXAMINER
GROUP 2800